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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,967	03/30/2006	Junko Takahashi	Q94014	1747

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WASHINGTON, DC 20037

EXAMINER
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AHMED, SHAMIM

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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11/10/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@SUGHRUE.COM  
PPROCESSING@SUGHRUE.COM



## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 6/30/09 have been fully considered but they are not persuasive. Applicant's arguments are not commensurate with the claims, specifically, applicants argue that Hiroyuki does not disclose step (3) of claim 3, where the surface of the article, which was once hydrophobilized in step (2), is hydrophilized by application of energy. In response to the argument, examiner states that such limitation is not recited in claim 3 and moreover, the claim is not limited to two-step hydrophobilization of the article surface.
2. As to Hayakawa, applicants argue that the coating layer comprises titanium oxide is formed by applying a photocatalytic coating composition and this forming step is different than that of the instant process steps (1) and (2).
3. In response to the argument, examiner states that the argument is not commensurate with the claimed limitation as the steps 1 and 2 because Hayakawa teaches the material such as titanium oxide to be released in the medium is same as the instant invention and such material undergoes the application of energy for changing the surface characteristic such as hydrophobic to hydrophilic (see the rejection) and therefore, reads on the limitation of decreasing the contact angle of water on the article surface by applying energy and the substance is released by the application of energy that is responsible for increasing a contact angle.
4. Therefore, the previous rejections are repeated herein as follows:

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 3 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by JP-9-2411405.

7. The Japanese reference disclose a process including the steps of releasing a substance from an article with an external force of ultraviolet radiation (see paragraph 0005 of the translated version) and such releasing step inherently reads on the limitation of increasing a contact angle of water; the reference also teach that the substance comprises a photoactive substance and this substance is emitted towards a substrate surface in order to form a solid surface which is rich in hydrophilic nature and also teach that the formed solid surface could be rich in water repellence, which means hydrophobic in nature (paragraphs 0010-0011) and aforesaid teaching reads on the limitation of decreasing the contact angle of water s the released substance convert a hydrophilic surface into a solid water repellent or hydrophobic in nature.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3,4,15, 36-37 and 46-47 rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al (2002/0016250 A1).

Hayakawa et al disclose a process of decreasing contact angle of water during the formation of an antifogging mirror and or self cleaned surface including the step of coating a photocatalytic coating such as titania (TiO<sub>2</sub>), which is considered to be hydrophobic surface and the coated surface is subjected to UV light for changing the surface characteristics and as a result the surface becomes super-hydrophilic (paragraph 0081 and also paragraphs 0034, 0078-0079 and 0086) on a glass substrate and the aforesaid, teaching appears to reads on the limitation of releasing a substance while changes the hydrophobic surface into hydrophilic by adhering the released substance to the surface.

Hayakawa et al also teach that polyester or PTFE plate is coated with the photocatalytic coating composition and subjected to UV light and the contact angle of water is measured (see paragraph 0276, Table 10) and it is concluded that when the contact

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angle of water is decreases the surface is hydrophilic and alternatively, the surface rendering hydrophobic to the degree that the contact angle of water increases (paragraph 0280). In the above teaching, Hayakawa et al may not explicitly teach a substance is released and the released substance adhered with the article while increasing the contact angle with water.

However, it would have been obvious to release a substance while subjecting the article with the UV light for providing the increased contact angle as the similar process condition taught by Hayakawa et al.

As to claim 4, it would have been obvious that the steps of changing the surface characteristics such as hydrophobicity and hydrophilicity are repeatable as Hayakawa et al discusses above.

As to claims 46-47, Hayakawa et al teach that the photocatalytic coating which exhibits the super hydrophilicity of such degree that the contact angle with water is decreased and the coating is dispersed in a film forming element of uncured or partially cured silicone (organopolysiloxane) or precursor thereof (paragraph 0106).

11. Claims 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al as applied above, and further in view of Huang et al (6,352,758) as supported by Huang et al (USP 5,939,182).

Hayakawa et al discusses above but fails to teach selectively forming the hydrophilic and hydrophobic portions or areas by selectively applying the energy to a specific regions.

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However, Huang et al teach a process of forming a patterned article containing alternating hydrophobic and hydrophilic surface region, wherein a polymer matrix containing inorganic oxide particles disposed on a substrate and rendering the surface of the composite structure is hydrophobic having increased contact angle and selected portion of the polymer is removed by high energy treatment, creates a higher concentration of silica particles at the surface of the selected areas and such selected areas become hydrophilic (col.3, lines 14-24 and col.4, lines 36-48) and furthermore, the hydrophilic areas having decreased contact angle (col.9, lines 30-37).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to employ Huang et al into Hayakawa et al's process for forming an article with highly regular and controlled fashion and with particular shape or oriented at a desirable uses of the article (col.3, lines 55-63) as suggested by Huang et al.

As to claims 39-45, Huang et al teach the energy treatment may comprises corona treatment, light energy such as laser (col.10, lines 28-43), wherein the teaching of laser is discusses in the 08/663,965 (see col.11, lines 31-41 in US patent 5,939,182).

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims

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are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 3,4,15 and 36-47 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of copending Application No. 10/574,200 (US 2007/0034269). Although the conflicting claims are not identical, they are not patentably distinct from each other because both the invention relating decreasing a contact angle of water by application of energy



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comprises heat and light energy and therefore the invention in the co-pending application 10/574,200 encompasses the instant invention.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on Mon-Thurs day (7:00-3:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shamim Ahmed  
Primary Examiner  
Art Unit 1792

SA  
November 4, 2009

/Shamim Ahmed/  
Primary Examiner, Art Unit 1792